

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-2. (canceled).

3. (withdrawn): The substituted isoxazole alkylamine derivative according to claim 2, wherein Z is an oxygen atom (i.e. the case that r is 0 and B is an oxygen atom in the formula (6)), and Y² represents a phenyl group which may be substituted, a naphthyl group which may be substituted, or a cycloalkyl group which may be substituted.

4. (withdrawn): The substituted isoxazole alkylamine derivative according to claim 2, wherein Z represents an -NR¹³- group wherein R¹³ represents a hydrogen atom or a lower alkyl group (i.e. the case that r is 0 and B is an -NR¹³- group) and Y² represents a phenyl group which may be substituted, a naphthyl group which may be substituted, or a cycloalkyl group which may be substituted.

5-6. (canceled).

7. (withdrawn): The substituted isoxazole alkylamine derivative according to claim 2, wherein X represents a group represented by the formula (2) wherein R³, R⁴, R⁵, and R⁶ may be the same or different and each represent a hydrogen atom, a lower alkyl group which may be substituted, a lower alkoxy group, a lower alkoxycarbonyl group, a halogen atom, or a cyano group, Y² represents a phenyl group which may be substituted, a naphthyl group which may be

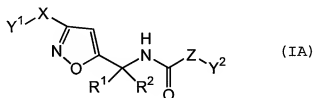
substituted, or a cycloalkyl group which may be substituted, n is 1 or 2, and m + n is 1, 2, or 3.

8. (withdrawn): The substituted isoxazole alkylamine derivative according to claim 2, wherein X represents a group represented by the formula (2) wherein R^3 , R^4 , R^5 , and R^6 may be the same or different and each represent a hydrogen atom, a lower alkyl group which may be substituted, a lower alkoxy group, a lower alkoxycarbonyl group, a halogen atom, or a cyano group, Y^2 represents a phenyl group which may be substituted, a naphthyl group which may be substituted, or a cycloalkyl group which may be substituted, n is 0, and m is 0, 1, or 2.

9. (withdrawn): The substituted isoxazole alkylamine derivative according to claim 2, wherein X represents a group represented by the formula (3) wherein R^3 and R^4 may be the same or different and each represent a hydrogen atom, a lower alkyl group which may be substituted, a lower alkoxy group, a halogen atom, or a cyano group, m represents 0, 1, or 2, and Y^2 represents a phenyl group which may be substituted, a naphthyl group which may be substituted, or a cycloalkyl group which may be substituted.

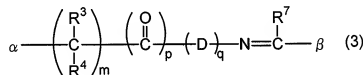
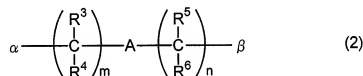
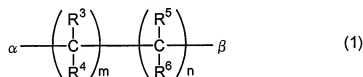
10. (canceled).

11. (withdrawn): An agri-horticultural fungicide containing as an active ingredient a substituted isoxazole alkylamine derivative represented by the formula (IA):



wherein R¹ and R² may be the same or different, and each represent a hydrogen atom, a lower alkyl group which may be substituted, a lower alkenyl group, a lower alkynyl group, a cycloalkyl group which may be substituted, a lower alkoxy group, a lower alkoxycarbonyl group, a lower alkylthio group, a halogen atom, a hydroxyl group, a carboxyl group, or a cyano group, or R¹ and R² may together form a cycloalkyl group which may be substituted;

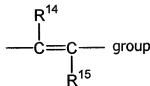
X represents the following formula (1), (2), or (3):



wherein R³, R⁴, R⁵, and R⁶ may be the same or different, and each represent a hydrogen atom, a lower alkyl group which may be substituted, a lower alkenyl group, a lower alkynyl group, a cycloalkyl group which may be substituted, a lower alkoxy group, a lower alkoxycarbonyl group, a lower alkylthio group, an amino group, a lower alkylamino group, a di(lower alkyl)amino group, a halogen atom, a hydroxyl group, or a cyano group, or each pair of R³ and R⁴, and R⁵ and R⁶ may together form a cycloalkyl group which may be substituted;

A represents an oxygen atom, a sulfur atom, an -S(O)- group, an -S(O)₂- group, an -NR¹²- group wherein R¹² represents a hydrogen atom or a lower alkyl group, a carbonyl group, an -NH-CO- group, a -CO-NH- group, a -C≡C- group, an -NH-CO-NH- group, an -O-CONH- group, an

-HC=N- group, or a



wherein R¹⁴ and R¹⁵ each represent a hydrogen atom or a lower alkyl group;

m and n each represent 0 or an integer of 1 to 3;

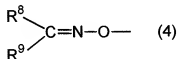
p and q each represent 0 or 1;

R⁷ represents a hydrogen atom or a lower alkyl group; and

D represents an oxygen atom or an -NH- group;

α binds to a Y¹ side, and β binds to an isoxazole moiety;

Y¹ represents a lower alkyl group which may be substituted, a lower alkenyl group which may be substituted, a lower alkynyl group which may be substituted, a cycloalkyl group which may be substituted, a lower cyclo alkenyl group which may be substituted, a phenyl group which may be substituted, a naphthyl group which may be substituted, a heteroaryl group which may be substituted, an aliphatic hetero ring which may be substituted, or the following formula (4):

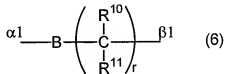
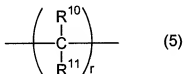


wherein R⁸ and R⁹ each represent a hydrogen atom, a lower alkyl group which may be substituted, or a phenyl group which may be substituted, or R⁸ and R⁹ may together form a cycloalkyl group which may be substituted;

Y² represents a lower alkenyl group which may be substituted, a lower alkynyl group which may be substituted, a cycloalkyl group which may be substituted, a lower cyclo alkenyl group which may be substituted, a phenyl group which may be substituted, a naphthyl group

which may be substituted, a heteroaryl group which may be substituted, or an aliphatic hetero ring which may be substituted;

Z represents a group represented by the following formula (5) or (6):



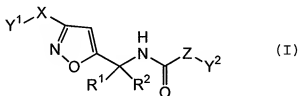
wherein R¹⁰ and R¹¹ may be the same or different, and each represent a hydrogen atom, a lower alkyl group which may be substituted, a cycloalkyl group which may be substituted, a lower alkoxy group, a lower alkoxy carbonyl group, a lower alkylthio group, an amino group, a lower alkylamino group, a di(lower alkyl)amino group, a halogen atom, a hydroxyl group, or a cyano group, or R¹⁰ and R¹¹ may together form a cycloalkyl group which may be substituted;

r represents 0 or an integer of 1 to 3; and

B represents an oxygen atom, a sulfur atom, or an -NR¹³- group wherein R¹³ represents a hydrogen atom or a lower alkyl group;

any one of α1 and β1 may be bound to a Y² side.

12. (currently amended): A substituted isoxazole alkylamine derivative represented by the formula (I):



wherein R¹ and R² may be the same or different, and each represent

(1) a hydrogen atom,

(2) a lower alkyl group or a lower alkyl group substituted with one or more

substituents of Group A which may be substituted,

(3) a lower alkenyl group,

(4) a lower alkynyl group,

(5) a cycloalkyl group or a cycloalkyl group substituted with one or more

substituents of Group A which may be substituted,

(6) a lower alkoxy group,

(7) a lower alkoxycarbonyl group,

(8) a lower alkylthio group,

(9) a halogen atom,

(10) a hydroxyl group,

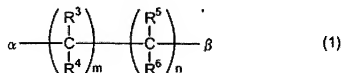
(11) a carboxyl group, or

(12) a cyano group, or

R¹ and R² may together form a cycloalkyl group or a cycloalkyl group substituted with

one or more substituents of Group A which may be substituted;

X represents the following formula (1):



wherein R³, R⁴, R⁵, and R⁶ may be the same or different, and each represent

(1) a hydrogen atom,

(2) a lower alkyl group or a lower alkyl group substituted with one or more

substituents of Group A which may be substituted,

(3) a lower alkenyl group,

(4) a lower alkynyl group,

(5) a cycloalkyl group or a cycloalkyl group substituted with one or more
substituents of Group A which may be substituted,

(6) a lower alkoxy group,

(7) a lower alkoxycarbonyl group,

(8) a lower alkylthio group,

(9) an amino group,

(10) a lower alkylamino group,

(11) a di(lower alkyl)amino group,

(12) a halogen atom,

(13) a hydroxyl group, or

(14) a cyano group, or

each pair of R^3 and R^4 , and R^5 and R^6 may together form a cycloalkyl group or a
cycloalkyl group substituted with one or more substituents of Group A which may be substituted;

m and n each represent 0 or an integer of 1 to 3;

α binds to a Y^1 side, and β binds to an isoxazole moiety;

Y^1 represents

(1) a lower alkyl group or a lower alkyl group substituted with one or more
substituents of Group A which may be substituted,

(2) a lower alkenyl group or a lower alkenyl group substituted with one or more
substituents of Group A which may be substituted,

(3) a lower alkynyl group or a lower alkynyl group substituted with one or more
substituents of Group A which may be substituted,

(4) a cycloalkyl group or a cycloalkyl group substituted with one or more

substituents of Group A which may be substituted,

(5) a lower cyclo alkenyl group or a lower cyclo alkenyl group substituted with one or more substituents of Group A which may be substituted,

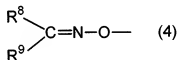
(6) a phenyl group or a phenyl group substituted with one or more substituents of Group B which may be substituted,

(7) a naphthyl group or a naphthyl group substituted with one or more substituents of Group B which may be substituted,

(8) a heteroaryl group or a heteroaryl group substituted with one or more substituents of Group B which may be substituted,

(9) an aliphatic hetero ring or an aliphatic hetero ring substituted with one or more substituents of Group A which may be substituted, or

(10) the following formula (4):



wherein R⁸ and R⁹ each represent

(1) a hydrogen atom,

(2) a lower alkyl group or a lower alkyl group substituted with one or more substituents of Group A which may be substituted, or

(3) a phenyl group or a phenyl group substituted with one or more substituents of Group B which may be substituted, or

R⁸ and R⁹ may together form a cycloalkyl group or a cycloalkyl group substituted with one or more substituents of Group A which may be substituted;

Y² represents a lower alkenyl group which may be substituted, a lower alkynyl group which may be substituted,

(1) a cycloalkyl group or a cycloalkyl group substituted with one or more substituents of Group A which may be substituted,

(2) a lower cyclo alkenyl group or a cyclo alkenyl group substituted with one or more substituents of Group A which may be substituted,

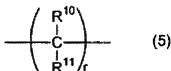
(3) a phenyl group or a phenyl group substituted with one or more substituents of Group B which may be substituted,

(4) a naphthyl group or a naphthyl group substituted with one or more substituents of Group B which may be substituted,

(5) a heteroaryl group or a heteroaryl group substituted with one or more substituents of Group B which may be substituted, or

(6) an aliphatic hetero ring or an aliphatic hetero ring substituted with one or more substituents of Group A which may be substituted;

Z represents a group denoted by the following formula (5):



wherein R¹⁰ and R¹¹ ~~may be~~ are the same or different, and each represent

(1) a hydrogen atom,

(2) a lower alkyl group or a lower alkyl group substituted with one or more substituents of Group A which may be substituted,

(3) a cycloalkyl group or a cycloalkyl group substituted with one or more substituents of Group A which may be substituted,

(4) a lower alkoxy group,

(5) a lower alkoxycarbonyl group,

(6) a lower alkylthio group,

(7) an amino group,

(8) a lower alkylamino group,

(9) a di(lower alkyl)amino group,

(10) a halogen atom,

(11) a hydroxyl group, or

(12) a cyano group, or

R^{10} and R^{11} may together form a cycloalkyl group or a cycloalkyl group substituted with one or more substituents of Group A~~which may be substituted~~;

r represents 0 or an integer of 1 to 3;

provided that the following (1) to (3) are excluded:

(1) a compound in which X is a single bond (i.e. the case that each of m and n is 0 in the formula (1)) and Y^1 represents a 4-hydroxy-3,5-di-tert-butylphenyl group;

(2) a compound in which R^1 and R^2 represent hydrogen atoms, X is a single bond (i.e. the case that each of m and n is 0 in the formula (1)) and both Y^1 and Y^2 represent unsubstituted phenyl groups when Z is a single bond (i.e. the case that r is 0 in the formula (5)); and

(3) a compound in which R^1 and R^2 represent hydrogen atoms, Z is a single bond (i.e. the case that r is 0 in the formula (5)) and Y^2 represents a 4-hydroxycinnolin-3-yl group or a 4-hydroxycinnolin-3-yl group substituted with one or more substituents selected from Group B~~which may be substituted~~,

~~wherein the phenyl group which may be substituted, the naphthyl group which may be substituted, or the heteroaryl group which may be substituted, may be substituted with one or more substituents selected from the group consisting of a lower alkyl group which may be~~

substituted with a halogen atom or a lower alkoxy group; a lower alkenyl group which may be substituted; a lower alkynyl group which may be substituted; a lower alkoxy group which may be substituted with a halogen atom; a lower alkylthio group; a lower alkanesulfinyl group; a lower alkanesulfonyl group; an R^{16} -NHCO group; an R^{16} -CONH group wherein R^{16} represents a hydrogen atom or a lower alkyl group; an R^{17} -O-NHCO group wherein R^{17} represents a lower alkyl group; an R^{18} -CO group wherein R^{18} represents a hydrocarbon group which may be substituted with a halogen atom; a lower alkoxy carbonyl group; a carboxyl group; a cycloalkyl group which may be substituted; an amino group; a lower alkylamino group; a lower dialkylamino group; an R^{19} -O-N=C(R^{20}) group wherein R^{19} represents a hydrogen atom or a lower alkyl group, and R^{20} represents a hydrogen atom, a lower alkyl group, or an amino group; an aliphatic heterocycle ring group; a lower alkyl carbonyl hydrazino group; a lower alkoxy carbonyl hydrazino group; a formyl group; an $H_2NN=C(R^{21})$ group; an $R^{22}(O)CHNN=C(R^{21})$ group wherein R^{21} and R^{22} each represent a hydrogen atom or a lower alkyl group; a hydroxyl group; a phenyl group which may be substituted; a naphthyl group which may be substituted; a heteroaryl group which may be substituted; a halogen atom; a cyano group; and a nitro group; and

wherein a substituent of Group A is the lower alkyl group which may be substituted, the lower alkenyl group which may be substituted, the lower alkynyl group which may be substituted, the cycloalkyl group which may be substituted, the lower cycloalkenyl group which may be substituted, or the aliphatic hetero ring which may be substituted, may be substituted with one or more substituents selected from the group consisting of a lower alkoxy group;

a lower alkoxy carbonyl group;

a halogen atom; a cyano group;

a nitro group;

a phenyl group;
a phenyl group substituted with one or more substituents of Group B which may be substituted;
a lower acyl group; ~~and or~~
a lower acyloxy group; ~~and~~
wherein a substituent of Group B is
a lower alkyl group, or a lower alkyl group substituted with a halogen atom or a lower alkoxy group;
a lower alkenyl group, or a lower alkenyl group substituted with a halogen atom or a lower alkoxy group;
lower alkynyl group, or a lower alkynyl group substituted with a halogen atom or a lower alkoxy group;
a lower alkoxy group, or a lower alkoxy group substituted with a halogen atom or a lower alkoxy group;
a lower alkylthio group;
a lower alkanesulfinyl group;
a lower alkanesulfonyl group;
an R¹⁶-NHCO- group or an R¹⁶-CONH- group wherein R¹⁶ represents a hydrogen atom or a lower alkyl group;
an R¹⁷-O-NHCO- group wherein R¹⁷ represents a lower alkyl group;
an R¹⁸-CO- group wherein R¹⁸ represents a hydrocarbon group or a hydrocarbon group substituted with a halogen atom;
a lower alkoxy carbonyl group;
a carboxyl group;

a cycloalkyl group or a cycloalkyl group substituted with a halogen or a lower alkoxy group;

an amino group;

a lower alkylamino group;

a lower dialkylamino group;

an $R^{19}O-N=C(R^{20})$ - group wherein R^{19} represents a hydrogen atom or a lower alkyl group, and R^{20} represents a hydrogen atom, a lower alkyl group, or an amino group;

an aliphatic heterocyclo ring group;

a lower alkylcarbonylhydrazino group;

a lower alkylloxycarbonylhydrazino group;

a formyl group;

an $H_2NN=C(R^{21})$ - group;

an $R^{22}(O)CHNN=C(R^{21})$ - group wherein R^{21} and R^{22} each represent a hydrogen atom or a lower alkyl group;

a hydroxyl group;

a phenyl group;

a naphthyl group;

a heteroaryl group;

a halogen atom;

a cyano group; or

a nitro group.

13. (canceled).

14. (previously presented): The substituted isoxazole alkylamine derivative according to claim 12, wherein the phenyl group which may be substituted, the naphthyl group which may be substituted and the heteroaryl group which may be substituted, may be substituted with a lower alkyl group which may be substituted with a halogen atom, a lower alkoxy group, a cyano group, or a nitro group.

15. (new): The substituted isoxazole alkylamine derivative according to claim 12, wherein R^1 and R^2 each independently represent a hydrogen atom or a lower alkyl group which may be substituted.

16. (new): The substituted isoxazole alkylamine derivative according to claim 15, wherein X and Z are single bonds (i.e. the case that m and n are 0 in the formula (1) and r is 0 in the formula (5)) and Y^2 represents a phenyl group which may be substituted, a naphthyl group which may be substituted, or a cycloalkyl group which may be substituted.

17. (new): The substituted isoxazole alkylamine derivative according to claim 15, wherein X represents a group represented by the formula (1) wherein R^3 , R^4 , R^5 , and R^6 may be the same or different and each represent a hydrogen atom, a lower alkyl group which may be substituted, a lower alkoxy group, a lower alkoxy carbonyl group, a halogen atom, or a cyano group, Y^2 represents a phenyl group which may be substituted, a naphthyl group which may be substituted, or a cycloalkyl group which may be substituted, and $m + n$ is 1, 2, or 3.

18. (new): The substituted isoxazole alkylamine derivative according to claim 15, wherein Y^1 represents a methyl group substituted with a halogen atom, and X and Z are each a

single bond (i.e. the case that m and n are 0 in the formula (1) and r is 0 in the formula (5)).